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ABSTRACT

During 1996-97 the Education Commission of the States explored three policy areas in which state efforts to improve student achievement have been increasingly concentrated: early childhood education, teacher quality and stronger connections between the K-12 and postsecondary systems. The study surveyed the scope and intensity of state efforts in the three areas, assessed their progress, and examined some of the methods available to states to invest in such initiatives in the face of limited resources. Many of the programs and policies reflected a profound shift in thinking about the basic structure of the public education system; equally impressive was the magnitude of states' financial investment in such initiatives. However, most of the states had undergone little or no systematic evaluation in terms of their impact on student learning. The information void is due in large part to the nature of public-sector budgeting, which is incremental and depends on ever-increasing revenues. The trends toward declining revenues and the escalating competition for resources increase the urgency of adopting a different, more investment-minded approach. The report concludes with an examination of some of the methods that states can use to develop a more investment-oriented approach to education policymaking. This approach is based on the notion that a more rational, results-based budget process--coupled with a greater emphasis on program evaluation and monitoring--can lead to significantly better use of existing resources and increased public confidence. One figure is included. (LMI)

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Investing in Student Achievement

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Investing in Student Achievement

Education Commission of the States

July 1997

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Foreword

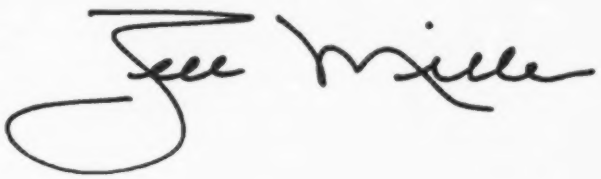
In seeking ways to improve public education in Georgia, we have followed the advice of Franklin Roosevelt, who once said: "Try something. If it works, try more of it. If it doesn't work, try something else."

All of us know that in the years ahead there will not be a lot of new money available for public education. As policymakers, we are going to have to be more pragmatic and more resourceful than ever before. We are going to have to be much clearer about what our priorities are and what results we want to achieve, and much more disciplined about keeping our resources tightly focused on policies and programs that produce demonstrable results.

Over the past year, the Education Commission of the States has directed its efforts toward marshaling information to assist state policymakers in meeting these challenges. This report, *Investing in Student Achievement*, takes an in-depth look at several areas in which determined action on the part of states has begun to yield tangible gains in student achievement. It provides examples of successful policy and practice, as well as specific strategies for bringing better data to bear on decisions about where to invest limited state dollars to have the greatest impact on student learning.

The future is, in a very real sense, in our hands. What our children learn as they come up through our education system is what will shape our communities, our states and our nation. As we reform public education, what we are really doing is shaping our collective potential for economic, scientific and creative achievement, as well as shaping our sense of humanity and our identity as a people.

I invite you to join me in renewing our commitment to higher levels of achievement for all students, and in working together to make our public education system the best in the world.



Zell Miller
Governor of Georgia
1996-97 ECS Chairman

Introduction

Last year, under the leadership of its 1996-97 chairman, Governor Zell Miller of Georgia, the Education Commission of the States set out to explore three policy areas in which state efforts to improve student achievement are increasingly concentrated: early childhood education, teacher quality and stronger connections between the K-12 and postsecondary systems.

Our task was to survey the scope and intensity of state efforts in these three areas, attempt to size up their progress and, finally, examine some of the methods available to states to invest in such initiatives in the face of limited resources.

We began with a look at the wide array of initiatives under way across the nation to expand and improve learning opportunities for children under the age of 5 — ranging from child-care quality standards to family support services to state-subsidized prekindergarten programs.

We examined what states are doing to improve the quality of the teaching force, focusing on new policies affecting teacher education, recruitment, hiring, induction, evaluation and professional development.

Finally, we looked at a variety of approaches being used by states to strengthen connections between the K-12 and postsecondary education systems, including promoting school-college partnerships, raising admissions standards and creating merit-based financial aid programs.

As we reviewed our findings, we were struck by the high level of creativity, leadership and commitment with which states are moving ahead in these three areas. Many of the programs and policies we scrutinized reflect a profound shift in thinking about the basic structure of the public education system, and heightened recognition of the crucial interconnectedness of its various parts.

States are working collaboratively with school districts, communities and local social-service providers, for example, to bring the early education and child care systems together, widening the range of learning environments for preschool-age youngsters. They are redesigning teacher education, licensing, hiring and professional development in a coordinated fashion, using performance standards linked to newly established academic standards for students. They are providing incentives for schools and higher-education institutions to work together to improve K-12

student achievement and increase postsecondary retention and graduation rates.

Equally impressive is the magnitude of states' financial investment in such initiatives. Connecticut, for example, has spent more than $300 million since 1986 on teacher-related initiatives, including rigorous new performance tests and licensing standards, mentoring programs and salary increases for entry-level teachers. Georgia has dedicated revenues from its state lottery to fund programs ranging from full-day, full-year prekindergarten to college tuition waivers for students with good grades. A number of states — including North Carolina, Oregon and West Virginia — are using shared-financing strategies and consolidated state-federal funding streams to support the development of comprehensive, community-based education and care programs for preschoolers.

The second stage of our task— gauging the progress of such efforts — was considerably more difficult. Despite states' growing investment in such programs and policies, most of them, we found, have undergone little or no systematic evaluation in terms of their impact on student learning.

There are a few notable exceptions. For example:

- In Connecticut and North Carolina, a steady upward trend in student achievement linked to sustained efforts to improve teacher quality
- In Arizona, significantly higher rates of college enrollment and graduation among minority students participating in a statewide middle- and high-school math-science program
- In Georgia, a marked increase in school readiness among at-risk children participating in the state-funded prekindergarten program.

In most cases, however, there is little more than anecdotal evidence to go on in judging the effectiveness of such initiatives. This information void is traceable, in large part, to troubling deficiencies in the way education policy is made and how resources are allocated.

Public sector budgeting is typically incremental by design and based on the expectation of ever-increasing revenues. There is no tradition of rigorous evaluation, of sustained oversight, of systematic reallocation of funds from unproductive policies and programs to ones that produce results.

Two current trends greatly increase the urgency of adopting a different, more investment-minded approach.

The first has to do with revenues. Only the most optimistic think that state budgets for education are likely to increase significantly in the foreseeable future. An aging population, less likely to have children in schools, is becoming more and more negative toward higher property taxes. Many taxpayers think the schools do not spend their existing money wisely, and this perception has plagued efforts to raise taxes to support education.

The second trend has to do with the continuing and escalating competition for resources. Growing expenditures for prisons, health care and social services undergoing cutbacks in federal support have placed tremendous pressure on state and local budgets. Within education, existing revenues are strained to the limit by increased demand in the form of booming enrollments and larger "special needs" populations.

Taken together, these trends mean that if current expenditure patterns continue, there will be few additional resources available to invest in new initiatives — even those with the potential to generate significant returns in terms of improved student achievement.

This report concludes, then, with an examination of some of the methods that states can use to develop a more investment-oriented approach to education policymaking. These methods are grounded in the notion that a more rational, results-based budget process — coupled with a greater emphasis on program evaluation and monitoring — can lead to significantly better use of existing resources and increased public confidence that expenditures for education are yielding tangible gains in school quality and student achievement.

Giving Children a Strong Start

The design of America's elementary schools is a holdover from an era in which there was little demand for educational programs for children under the age of 6. Back then, all but a few youngsters grew up in families with working fathers and stay-at-home mothers.

Today, the majority of America's preschool-age youngsters live in families where both parents work outside the home or in households headed by a single parent who works full time. An education system that does not provide for nursery school, all-day kindergarten and other child-development programs is a system profoundly out of sync with the needs of today's families.

While the demand for full-time, year-round preschool programs has increased significantly, the majority of federal and state funds earmarked for early childhood education still goes to part-day, part-year programs. Working parents are forced to shop for preschool programs on the open market, where quality and availability vary widely. Even middle-income families have difficulty finding well-run, affordable programs; poor families, whose children are at the greatest risk of being unprepared for school, often have no options save unlicensed day care.

Many working parents turn to community-based child care centers, which rely primarily on parent fees to support all or most program costs. Although fees are high, they typically do not generate enough revenue to hire the caliber of teachers and other staff needed to provide high-quality early childhood education.

In short, the current system often forces families to choose between child care, which meets the needs of parents but may not provide sufficient opportunities for learning, and early education, which benefits children but often cannot meet the needs of employed parents.

This haphazard approach to early-childhood education has not served the nation well. According to a 1991 study by the Carnegie Foundation for the Advancement of Teaching, as many as one in three children enter kindergarten without such basic skills as knowing their address or how to tie their shoes, let alone the habits and attitudes so crucial to academic success: patience and perseverance, self-control, the desire to learn, confidence in their ability to learn.

The casualty rate for youngsters who get off to a bad start in school is high — and so are the costs of their failure to thrive. Such children are more than twice as likely to fall behind and have to repeat a grade, to require remedial instruction, to drop out of school in the 9th or 10th grade, to wind up on welfare.

In recent years, a number of states have recognized the need to bring the early education and child care systems together, and have begun to develop new policy goals and approaches. These policies are designed to:

- Promote early learning opportunities in various environments
- Improve professional development for early childhood teachers and caregivers
- Mobilize communities to promote early learning and support young children and families
- Redefine leadership at the state level to support comprehensive, community-based early care and education systems.

Promoting Early Learning Opportunities in a Range of Environments

Preschool initiatives and child care initiatives are the primary policy approaches states are using to promote early learning opportunities in diverse environments. While these two strategies are discussed separately in this section, it is important to note that states often combine them in a single, coordinated initiative.

Preschool Initiatives

The effectiveness of high-quality preschool programs for children, particularly those at greatest risk of entering elementary school unprepared, has been widely documented. As just one example, 4- and 5-year-olds enrolled in **Colorado**'s state-subsidized preschool program for at-risk children gained, on average, 15 months in language development over an eight-month period, according to a 1994 study by the Colorado Department of Education. The estimated savings to taxpayers: up to $2 million a year in remedial and special-education services.

State investments in preschool programs have grown dramatically in recent years. Before 1980, only a handful of states had prekindergarten initiatives. By 1992, state expenditures for such programs totaled more than $700 million a year. Currently, 38 states fund prekindergarten programs and/or supplement federal Head Start programs.[1]

In the early years, state initiatives focused on part-day, public school programs aimed primarily at educationally disadvantaged 4-year-olds. But more and more, states are recognizing the need to respond to diverse family needs, offer longer hours, provide services in a range of settings and coordinate with community agencies to provide comprehensive family support services. For example:

- The **Georgia** Prekindergarten Program is the largest statewide preschool initiative in the nation, serving 60,500 children in the 1996-97 school year. The program, established in 1993, is available to all of the state's 4-year-olds, regardless of income, and provides services for at least 6.5 hours a day in a wide range of settings, including public and private schools, community centers, colleges and universities and private child care centers. The $210 million annual cost is funded entirely by proceeds from the Georgia Lottery. Transportation and family support services must be made available to income-eligible families who want and need services. Inservice staff training is required and funded.
- **Minnesota**'s Learning Readiness Program, which was established in 1991, provides funds to help school districts plan and implement a continuum of services for preschool-age children, regardless of income. Each district must establish an advisory council to develop a plan addressing child development and early learning, health referrals, nutrition services, parent involvement and community outreach. Learning Readiness funds are used to help fill gaps and coordinate services. Some districts directly operate preschool programs; others purchase slots in community-based preschool, child care or Head Start programs. In 1996-97, the state allocated approximately $9.5 million for the program, which currently serves 90% of the state's 4-year-old children in 343 of the state's 379 school districts.

Child Care Initiatives

While states have always played a key role in developing child care initiatives, most have relied on federal funds to support such services. But in the past several years, states have begun to shoulder a larger part of the burden, allocating more than $2.3 billion a year to match and/or supplement federal child care funds.[2]

The most effective initiatives appear to be those that build on the existing public school, Head Start and child care systems, and allow funds to flow to a wide range of early childhood programs for children of all ages, in community-based organizations, schools and homes. Shared financing strategies that incorporate public and private funds, including parent fees, are often easier to

implement within the child care system, largely because such programs are already blending a wide range of financial resources, including parent fees.

A number of states have undertaken initiatives aimed at strengthening the quality and comprehensiveness of child care programs. For example:

- **Florida** has improved staff-to-child ratios for infants and toddlers in child care centers, raised hiring standards for staff and required that at least one staff person for every 20 children have a child development associate credential or its equivalent. State funds were made available to help teachers obtain such credentials. The state recently established the Gold Seal Program, which gives special recognition to child care programs that voluntarily meet national accreditation standards.

- **Wisconsin** has established a grant program that makes state funds available for accreditation, mentor-teacher training, on-site technical assistance and improved staff compensation and benefits. The Wisconsin Child Care Improvement Project, which is administered by a consortium of private-sector organizations, provides pre-licensing consultation and training. The state also supports child-care resource and referral services.

Improving Professional Development for Early Childhood Teachers and Caregivers

Whether children are successfully engaged in an early childhood program depends largely on the quality of teachers. The Carnegie Foundation's Task Force on Learning in the Primary Grades has concluded that "helping teachers master effective practices is one of the best investments that taxpayers can make in children's learning."[1]

A number of states have begun to develop a coordinated, cross-system approach to early childhood training aimed not only at improving the quality and effectiveness of training, but also at creating new career opportunities for early childhood practitioners.

These initiatives are designed to serve teachers, supervisors, directors and staff in all early childhood learning environments — schools, child care centers, Head Start programs, family child care homes and parent education programs — in a single, coordinated system. Training opportunities build on one another and lead to a portable early childhood degree or credential. Increased knowledge and competence are rewarded by linking training and compensation. Some examples:

- **New York** is in the process of creating the framework for a statewide career development system for all early childhood teachers, administrators and staff. The first step was to establish a core body of knowledge for all practitioners who work with children under the age of 8. Efforts are under way to link existing training opportunities to the competencies identified in this core body of knowledge. A Web site for accessing information on early childhood training opportunities by knowledge-base area and by geographic location has also been established. Local models to link noncredit training with community college programs and expand the availability of early childhood degree programs have been developed. In addition, public school principals and superintendents are being encouraged to hire staff who have obtained the state's early childhood teaching credential.

- **North Carolina**'s Teacher Education and Compensation Helps (TEACH) program is a public/private partnership that supports educational scholarships for teachers, directors and staff in all early childhood education settings. Scholarships partially fund tuition, books and travel for individuals who are interested in education and training leading to attainment of a state credential or a bachelor's degree in child development. Wage increases or bonuses are provided upon completion of an agreed-upon number of course hours or upon attainment of a credential or degree.

Mobilizing Communities to Support Early Childhood Education and Care

Communities are often the most effective place to develop a common vision and shared financing for early care and education. Collaborative planning and implementation can enable community partners to pool resources and provide higher-quality, more accessible services to an increased number of children and families. A number of states have established initiatives to create a more responsive and flexible early childhood care and education system designed and guided by communities and families. For example:

- **West Virginia** has established a Family Resource Network in each of its 55 counties. Networks include parents, business leaders, local government officials, religious leaders and service providers. Each network develops a countywide plan to make comprehensive health, education and social services available at single "intake points." Using pooled funds, the state awards small grants (typically $50,000 a year) to support the cost of local planning and service coordination. Networks assist the state in monitoring service providers as well as gathering data on local needs and resources.

- **Under North Carolina's** Smart Start program, parents, teachers, doctors and nurses, child-care providers, nonprofit groups, religious and business leaders form partnerships at the county level that set goals for the education and health care of children under the age of 6. The state awards Smart Start funds through a competitive grant process to help counties implement their plan. Each local partnership has five core services: high-quality child care, improved access to child care, affordable child care, family support services and health and safety. Fifty-five of the state's 100 counties are participating in the program, at a cost to the state of $69 million. To date, an estimated 154,000 children have benefited from the Smart Start program.

Redefining State-Level Leadership

Families, schools, employers, local governments, community organizations and other partners play a key role in developing and financing early childhood care and education programs. States can act as catalysts, providing the leadership necessary to spur and sustain these partnerships. State leadership is particularly vital in the following areas: financing strategies, program standards, cross-system collaboration, assessment and accountability.

Responsibility for overseeing early childhood services is typically shared by multiple state agencies or offices. These entities rarely share funding, and rarely collaborate with one another when developing rules, regulations and reporting requirements. Strong, state-level coordination and leadership — including an effective system for assessing results — are crucial to the success of comprehensive early childhood care and education initiatives.

States have used a number of strategies to promote coordinated, state-level leadership for early childhood care and education services. For example:

- **West Virginia** created a Cabinet on Children and Families as part of its 1990 comprehensive education reform legislation. An Early Childhood Implementation Commission was established two years later to plan and implement cross-systems services for preschool-age children and to serve as staff to the cabinet on early childhood issues. The cabinet and the commission provide leadership to the state's community-based Family Resource Networks.

- **Georgia** has established a permanent state Policy Council to oversee implementation of local partnership initiatives, remove state-level budget and policy obstacles, link policy and budget to outcomes and spur creative financing efforts.

- Some states have chosen to establish entirely new agencies to spur system reform efforts and improve the coordination and quality of services to children. For example, **Minnesota**

Georgia Prekindergarten Program

The first group of students to take part in the Georgia Prekindergarten Program got an academic boost that lasted at least through 1st grade, according to a continuing evaluation of the program.

Researchers from Georgia State University are tracking 500 children from poor families through the end of this year, when the youngsters will finish 2nd grade. Roughly half of those children took part in the program in 1993-94, when it was open only to low-income families. The other half attended no preschools.

In kindergarten, the researchers found, the preschool graduates outperformed the control group on a standard scale used to measure academic and social development. Moreover, the students' kindergarten teachers rated them higher than the other children in academic, physical, social and communication skills. The former preschool students also had 26% fewer absences and were promoted to 1st grade at higher rates than the comparison group.

When they reached 1st grade, the preschool children still outscored the comparison group on the academic-development scale the researchers used, and were still missing fewer days of school. But unlike in kindergarten, their teachers saw no differences between the two groups of students, rating them about equally in terms of academic and social development. A smaller subgroup of the children also took the Iowa Test of Basic Skills in 1st grade. Among this group, program children scored about the same as their study counterparts.

But while the numbers paint a mixed picture of the program's lasting success, parents of children who participated in it were overwhelmingly pleased. Eighty-six percent of parents polled said they could see the positive impact of the preschool program on their 1st-grade children.

Source: Council for School Performance, Georgia State University, 1997; Education Week

recently created a new Department of Children, Families and Learning, which replaces the Department of Education and includes a number of programs previously administered by other state agencies.

Conclusion

New ways of planning, financing and delivering early education and care services require new approaches to evaluation. Most of the methods currently used to evaluate success involve tracking inputs and outputs, but do not measure the results of the activities. Many states involved in system reform efforts have begun to develop benchmarks or progress indicators to help measure the results of their efforts.

Sharon Lynn Kagan of Yale University's Bush Center for Child Development, suggests that efforts to measure results can be grouped into four categories:[4]

- **What children know and can do**. This includes indicators related to children's physical well-being, social and emotional development, use of language and general knowledge. The **Maryland** Primary Assessment System, which is designed to assist policymakers, schools and families in measuring progress and helping children to achieve success, is based on this approach.

- **Child and family conditions**. This includes information regarding the conditions in which children live, such as their health, family income and family composition. Benchmarks that have been established in **Oregon** and **Minnesota** are examples of this approach.

- **Service provision and access**. This includes information that characterizes the type and availability of services for children and families, for example, the number of children who have access to accredited child care and early education, or the percentage of families who spend more than 10% of family income for child care. The objectives and benchmarks established by **Vermont**'s Starting Points project are an example of this approach.

- **Systems capacity**. This includes information that characterizes the way services are linked and the extent to which they function as a system, including an examination of service redundancies, omissions, capacities and efficiencies.

What Makes State-Level Leadership on Early Childhood Issues Effective?

Effective state-level leadership on early childhood issues typically includes the following:

- **A vision**. The state has established and clearly articulated a vision for supporting children and families through a comprehensive early childhood care and education system. This vision is tied to specific results and has high-level, bipartisan support.

- **Strong leadership**. The governor's office — or other leadership post, such as the commissioner of education — is used as a "bully pulpit" to promote the initiative.

- **Cross-system engagement**. Many service delivery systems are involved in planning and implementing the initiative. Each of these systems has specific implementation goals, and there is an ongoing process for re-evaluating and restructuring goals and relationships across the systems.

- **Private-sector support**. The business and philanthropic communities are involved in planning the initiative, and explicit strategies have been developed to engage them in implementation.

- **Local connections**. The initiative is designed to encourage and support local, cross-systems planning. Communities are held accountable for results, but are given the flexibility to decide the best way to achieve results.

- **A commitment to removing budget and policy obstacles at the state level**. The state has an explicit process for waiving rules, regulations, procedures and funding restrictions that serve as barriers to implementation. Efforts are made to ensure that the state's automated systems "talk" to one another, and that the contract process and reporting requirements are consolidated and streamlined.

- **Pooled or coordinated funding**. State funds are used in a coordinated fashion to support a range of program initiatives that respond to the needs of children and families. Creative financing strategies are encouraged.

Investing in Quality Teaching

The primary rationale for investing in quality teaching is one that virtually every parent understands and a large body of research confirms: What teachers know and do is the most important influence on what students learn.

The recent report of the National Commission on Teaching and America's Future, *What Matters Most: Teaching for America's Future*, cited several areas of research that point to teacher expertise and preparation as powerful influences on student achievement.

For example, in one of the largest-scale studies of the past decade, Ronald Ferguson of Harvard University found that the single most important factor influencing student learning was teacher experience and qualifications, measured by masters degrees as well as performance on a statewide teacher examination. This study of more than 1,000 school districts concluded that every additional dollar spent on more highly qualified teachers netted greater improvements in student achievement than did any other use of school resources.[1]

Because of growing enrollments and increased retirements, more than 2 million teachers will be hired over the next decade. This means that state policymakers can have a major impact on the quality of the teaching force if they are willing to make strategic investments in teacher preparation, evaluation and professional development.

There are two central reasons for states to invest in a high-quality teaching force. First, as education grows more important to society and as states set new standards for students, states have a growing moral and legal obligation to ensure that schools and districts have the resources, including well-prepared teachers, needed to meet these standards. Second, states control key policy levers for teaching: approval of teacher education programs, licensing, professional development, funding and other school and education-related policies. States can make a critical difference in the following policy areas:

- Setting and enforcing teacher standards
- Ensuring adequate preparation and induction for teachers
- Recruiting, keeping and developing good teachers

Setting and Enforcing Teacher Standards

When people seek help from doctors, lawyers, accountants or architects, they rely on the unseen work of a three-legged stool supporting professional competence: accreditation, licensing and certification. Coherent standards for professional knowledge and practice are embedded in each of these: Professional schools, in order to be accredited, must demonstrate that they offer a set of courses and other experiences that cover essential areas of skill and knowledge; licensing examinations ascertain that candidates have mastered the knowledge and skills they need in order to enter the profession; and certification tests embodying even higher standards are used to designate advanced levels of expertise.

Until recently, teaching has not had a set of coherent standards that outline clearly what teachers need to know and do to be effective — and what standards there are have often gone unenforced.

In the area of teacher licensing, for example, few states have incorporated into their licensing standards the most recent advances in knowledge about teaching or the new skills teachers need to teach today's students. In many states, teachers are required to learn little or nothing about child development, learning theory, curriculum development or assessment, and have no access to knowledge about the special needs of learners who will be in their classrooms.

While some states recently have begun to require some form of testing for a teaching license, the tests in current use — little more than multiple-choice tests of basic skills and general knowledge — typically fall short of what is needed to adequately sort those who can teach from those who cannot. Furthermore, in many states the cutoff scores are so low that there is no effective standard for entry. Finally, states frequently waive the standards they have, leaving some students vulnerable to teaching that is wholly uninformed by professional knowledge about effective teaching.

An effort to produce teaching standards that are directly linked to standards for student learning has recently been accomplished by three professional bodies: the Interstate New Teacher Assessment and Support Consortium (INTASC), a consortium of states that has developed new standards for teacher licensing; the National Board for Professional Teaching Standards, which has developed standards and assessments for advanced certification of accomplished teaching; and the National Council for Accreditation of Teacher Education (NCATE), which has developed new standards for teacher education that require schools of education to demonstrate how they are incorporating new knowledge about the effective teaching of subject matter and various approaches to learning in their preparation of teachers.

Indiana, Ohio and **North Carolina** are among a number of states that are using this continuum of teaching standards as the basis of learning throughout the teaching career. They have created partnerships with NCATE for accrediting teacher education programs, adopted the INTASC standards as the basis for state licensing and adopted the National Board standards as the benchmark for accomplished teaching.

A policy package that couples salary supports with a comprehensive approach to performance-based licensing has been implemented in **Connecticut**, where efforts to improve teaching quality have been under way since 1986, when the state's Education Enhancement Act was passed.[6] The act committed more than $300 million to do the following:

- Raise standards for teacher education and licensing. Connecticut requires entering teachers to meet rigorous standards for licensing, including a performance assessment coupled with mentoring during the first year of teaching and a master's degree within a few years of entry.

- Support and assess beginning teachers. During the first year of teaching, novices receive help from a school-based mentor or mentor team. Beginning teacher clinics are offered to help teachers prepare for a performance-based assessment of essential teaching skills, which is conducted by state-trained assessors through analysis of teachers' plans and products, videotapes of their teaching and assessment of student work.

- Equalize district capacity to pay for teachers' salaries. The state provided funds to school districts to bring beginning teacher salaries up to a minimum level. This helped to equalize funding for schools, as well as enable schools to hire more qualified teachers.

Preparing and Inducting New Teachers

Many European and Asian nations require teachers to gain one or more disciplinary degrees in college before they enter a two- to three-year program of teacher education at the graduate level, one that includes at least a year-long internship in a collaborating school, mentoring and other induction supports, and graduated responsibility for beginning teachers.

By contrast, in the United States, most teachers are still educated in four-year undergraduate programs that seek to impart both

knowledge of subject matter and knowledge of teaching and learning within the undergraduate degree. Key elements of teacher learning are often disconnected from one another. Coursework is separate from practice teaching; professional skills are segmented into separate courses; faculties in the arts and sciences are isolated from education professors. Would-be teachers are left to their own devices to put it all together.

Moreover, the kinds of supervised internships regularly provided for new entrants in other professions — architects, psychologists, nurses, doctors, engineers — are rare in teaching. When new teachers enter the classroom, they are typically given the most challenging assignments with the most difficult-to-teach students in the most disadvantaged schools — and are left to sink or swim with little or no support.

Alone in their classrooms, without access to colleagues for problem solving or role modeling, discouragement can easily set in. The weight of accumulated evidence clearly shows that traditional sink-or-swim induction contributes to high attrition — about 30% of beginning teachers leave within the first five years — and to lower levels of teaching effectiveness.

Successful strategies to improve teacher education must incorporate new knowledge about learning and effective teaching, link theory to practice and provide ongoing supports for learning throughout the early years of teaching.

Since 1986, about 300 colleges have created graduate-level teacher education programs that allow for more extended clinical training. Extended programs allow beginning teachers to complete a bachelor's degree in their subject area and acquire a firm grounding in teaching skills. Some are five-year models that begin in undergraduate school and allow an extended program of postbaccalaureate preparation. Others are one- to two-year graduate programs serving recent graduates or mid-career recruits. In either case, because the fifth year allows students to devote their energies exclusively to teacher education for at least a year, these programs allow for extended practice teaching in schools tightly tied to relevant coursework.

Studies of these new programs find that their graduates are more effective with students, and that they enter and stay in teaching at much higher rates than graduates of four-year programs.

North Carolina Teacher-Quality Initiatives

North Carolina is one example of a state that has focused substantial resources on teacher recruitment and professional development.

The North Carolina Teaching Fellows Program was created in 1986 by the state legislature to recruit talented high school graduates into teaching. The program, which is offered through 14 state colleges and universities, provides intensive, year-round learning experiences that extend beyond regular teacher education courses. The students agree to teach for four years in the state's public schools in exchange for a $20,000 four-year college scholarship that underwrites their preparation.

So far, the program has recruited 3,600 high-ability high school graduates to teaching, including significant numbers of men and people of color. North Carolina principals report that the Fellows far exceed other new teachers in their performance, and the Fellows themselves give high marks to the preparation they received.

North Carolina also sponsors a statewide Teachers Academy, local chapters of the National Writing Project and the North Carolina Center for the Advancement of Teaching (NCCAT). The last of these serves teachers from all grades and subject areas, offering year-round seminars, residencies for pursuing independent study, special programs for schools and outreach programs for alumni. Currently, 73% of the state's public schools have one or more teachers who have attended NCCAT. External evaluations show a positive impact on teachers and "a carry-over benefit to students."

Finally, the state sponsors support groups for National Board certification, underwrites teachers' fees for pursuing certification and offers a 4% salary increase for teachers who achieve certification. As of February 1997, North Carolina had more National Board-certified teachers than any other state in the nation.

Recent analysis of trends on the National Assessment of Educational Progress found that between 1990 and 1996, North Carolina registered larger student achievement gains in mathematics and reading than any other state.

Sources: Learning Research and Development Center, University of Pittsburgh; National Board for Professional Teaching Standards; National Commission on Teaching and America's Future; National Assessment of Educational Progress.

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Mentoring Makes a Difference

A number of states and school districts have created mentoring programs as a way to reverse the traditional "sink or swim" indoctrination of fledgling teachers. For example, all teachers new to the Cincinnati Public Schools are designated as interns and assigned, for at least a year, an in-school mentor who has been specially selected and trained as a "lead" teacher. Since the program began, overall attrition of beginning teachers has decreased and beginners attain levels of professional competence more quickly.

In Rochester, New York, 90% of the interns served by their district mentoring program from 1987 to 1995 have stayed in teaching, as compared to a 60% rate prior to establishment of the program.

The California New Teacher Support Program, which followed 6,000 teachers who were mentored from 1988 to 1992, reduced the attrition rate of new teachers by an impressive two-thirds.

Source: National Commission for Teaching and America's Future, 1996

Many of these programs involve beginners in more intensive preparation featuring year-long internships at "professional development schools" before they are hired, at which point they are assigned to an experienced mentor who works intensively with them during the first year of teaching.

Internships that ensure mentoring for beginning teachers have several benefits. First, beginning teachers who receive mentoring become more effective more quickly because they learn from guided practice rather than through trial-and-error. Second, teachers who receive mentoring and other supports leave teaching at much lower rates. Finally, internships that include performance assessments like those being developed by INTASC provide a basis for ensuring that individuals who receive a professional teaching license are indeed competent, thus reducing the need for confronting the effects of incompetence throughout the career.

Thus far, only a few states, such as **Minnesota** and **Ohio**, have taken steps to support substantially restructured training for teachers that includes extended internships or residencies in professional development schools. Among the strategies available to states interested in supporting major redesigns of teacher education:

- Offering challenge grants to colleges to develop extended programs and professional development schools
- Changing teacher-credentialing policies to make performance assessments, internships and mentoring programs a required part of the licensing process.

Recruiting, Developing and Retaining Good Teachers

Each year, the nation produces more new teachers than it needs; yet there are shortages of qualified candidates in particular fields (e.g., math and science) and particular locations (primarily inner-city and rural). While some school districts cannot find the applicants they need, others have long waiting lists of qualified teachers eager for work. Some states routinely export their surplus teachers; others scramble to import them.

Teacher shortages are made worse because qualified teachers often find themselves unable to transfer their license to their new state, and teachers who could be persuaded to move to districts or states with shortages face the loss of seniority and salary and pension credits.

Once hired, teachers have few high-quality opportunities to continue their learning and few incentives to continue to become more skillful in the classroom. Current incentives only haphazardly reward learning aimed at better teaching. Monetary incentives take the form of salary increases tied to graduate coursetaking which rewards seat time, not greater effectiveness. The only way to advance in the profession is to become an administrator or a nonteaching specialist. Consequently, individuals are rewarded for leaving teaching but not for staying and getting better at it.

Teacher Recruitment and Hiring

Among the ways in which state investment in education can make a critical difference in student achievement is through the hiring and training of more highly qualified teachers. Useful strategies include:

- **State scholarships**. States can support scholarships for teachers who make a commitment to teaching in high-need fields and hard-to-staff locations.

- **Minority recruitment**. States can work with schools and colleges to expand the pools of teachers of color and from diverse linguistic backgrounds through targeted recruitment programs and financial support. These efforts can include support for programs that encourage middle and high school students to consider a teaching career.

- **Creation of portable pension systems**. Such plans (similar to the system established for college faculty early in this century) could help ensure that teachers can remain vested in their original districts.

- **Reciprocal licensing agreements**. State participation in the INTASC assessment system will soon allow strong reciprocal licensing agreements among states.

Teacher Professional Development

More productive approaches to professional development can be linked to new career paths for teachers that better reward and utilize knowledge and skills. To create relevant, sustained learning for teachers, the National Commission on Teaching and America's Future has recommended that states and districts:

- Organize professional development around new standards for student learning as well as new standards for professional teaching.

Connecticut Teacher-Quality Initiatives

In Connecticut, efforts to improve teacher quality have been under way since 1986, when the state's Education Enhancement Act was passed. The three major components of the act were: (1) raising standards for teacher education and licensing, (2) supporting and assessing beginning teachers and (3) equalizing school districts' capacity to pay for teachers' salaries.

As a result of these initiatives, Connecticut experienced a dramatic boost in teacher quality and the quality of preparation programs, and within three years had eliminated teacher shortages, a chronic problem in some parts of the state.

Today, teachers in Connecticut are among the best prepared in the nation. The proportion of licensed teachers with a degree in their field is one of the highest in the country. The percentage of teachers with a master's degree or higher has risen to 81%, up from 74% in 1985. New teachers must complete a preparation program that includes a bachelor's degree in their field and a rigorous set of education courses. Teachers can be hired only after passing tests of basic skills and subject-area knowledge; they can receive a continuing license only after completing an intensive performance assessment modeled after that of the National Board and tightly coupled to the state's academic standards for students.

Over these years, student achievement in Connecticut has shown impressive gains relative to other states in the region and those with similar demographic characteristics. For example:

- On the 1992 National Assessment of Educational Progress (NAEP) reading test, 34% of Connecticut 4th-graders scored at or above proficiency, compared with 29% of the nation's students. In 1994, Connecticut's percentage grew to 38, while the nation's grew to 30%.

- In 1996, Connecticut ranked third in the nation in average scores for 4th-graders on the NAEP mathematics test, and eighth in the nation for 8th-graders. The proportion of 8th-graders rated at or above proficiency grew from 22% in 1990 to 31% in 1996, one of the largest gains posted nationwide. The proportion of 4th-graders scoring at or above the basic level grew to 75%, second only to Minnesota.

- The percentage of 4th-graders at or above the state goal increased for all three subtests of the Connecticut Mastery Test from 1993 to 1996. In mathematics, the percentage of students at or above the state goal rose from 53% in 1993 to 59% in 1996. In reading, the percentage of students at or above the goal rose from 45% in 1993 to 55% in 1996. In writing, the percentage of students at or above the goal increased from 32% in 1993 to 46% in 1996.

Sources: National Assessment of Educational Progress, 1996; National Commission on Teaching and America's Future, 1996.

- Support new sources of professional development, such as teacher academies, school-university partnerships, professional development schools and networks that connect teachers within and across schools and disciplines.

- Encourage schools to make ongoing professional development part of teachers' daily work through school designs that allow joint planning, research, curriculum and assessment work, study groups and peer coaching.

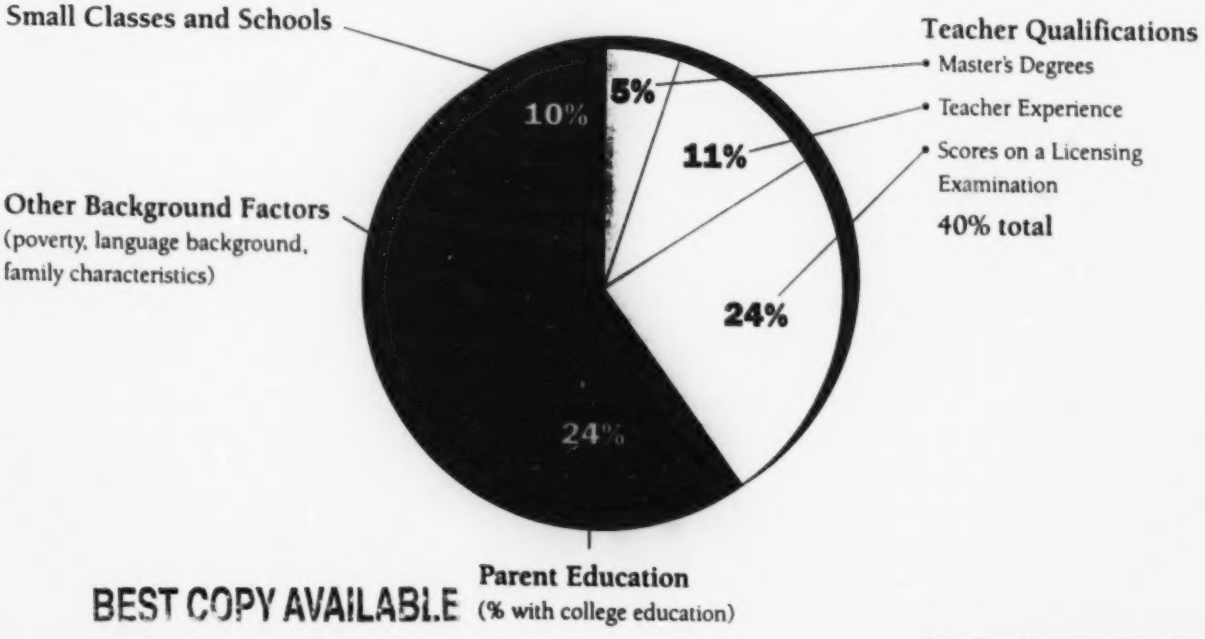
- Allocate a specific percentage of state and local education funding to be consistently devoted to high-quality professional development, as Missouri does. States should also provide matching funds for districts to increase their investments in professional development to 3% of total expenditures.

- Develop a career continuum for teaching linked to assessments and compensation systems that reward knowledge and skill. This would include building into compensation systems additional pay for licensing in more than one subject area, successful completion of performance assessments for a full continuing license, and National Board certification; paying expert teachers at levels comparable to those of administrators; and allowing teachers to take on other professional roles such as mentoring, curriculum development and leadership roles.

Conclusion

Policies in support of high-quality teaching should be viewed as a single tapestry, with each of the strategies examined above as tightly interwoven threads. No one approach can create sufficient change. Policymakers should think about how to align their policies in support of student and teacher learning so that they are coherent and complementary. They should also consider what policies from an earlier era need to be eliminated or rethought so that schools can proceed with fewer constraints to create the new models needed to ensure much higher levels of learning for much greater numbers of children.

Average Proportion of Variance in Student Test Scores (Grades 1-7) Explained By:



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Source: Harvard Journal on Legislation, 1991

Building Stronger Connections

Between the K-12 and Postsecondary Systems

The expectations placed on students serve as powerful motivators to their learning. One way expectations of high performance get communicated in the K-12 grades is through the prospect of students' attending college. Currently, 60% of high school graduates go on to college, and that rate is predicted to rise to 70% over the next decade. What postsecondary education expects of students in terms of admission, performance and graduation requirements has a great deal to do with what students in the middle grades and in high school will have to achieve.

In the past several years, states have made steady progress in implementing reforms to raise achievement levels. These reforms seek to improve student learning by focusing K-12 schools more on what students should know and be able to do by the time they graduate, and less on the processes used to impart this learning. In many reforming schools, Carnegie unit-based course offerings, class rankings and even grades are being supplemented or replaced by new approaches that schools believe are more effective in helping students realize their learning potential.

For the most part, people involved in higher education welcome and support such efforts. But many are uncertain about what these changes mean for their own institutions. Postsecondary admissions offices face especially difficult and immediate challenges; few are prepared to evaluate high school graduates whose transcripts feature interdisciplinary studies, applied learning courses or workplace learning experiences. They are accustomed to a screening process that relies almost exclusively on grade-point averages and standardized aptitude-test scores.

Policymakers and the public are looking to colleges and universities to provide greater guidance to the K-12 system in creating a high-quality learning environment for all students — and there are compelling reasons for them to do so. If public school reforms succeed in improving student motivation and learning, institutions of higher education will find themselves enrolling more students prepared to do college-level work, reducing outlays for freshman-year remediation.

This increased population of highly motivated and well-prepared students also is likely to have a positive impact on retention and graduation rates, a key concern of many colleges and universities. According to a July 1996 report by American College Testing, the percentage of college freshmen who fail to return for their sophomore year has reached a new high of 26.9%, while the percentage of four-year college students who graduate within five years has fallen to a record low of 53.3%.

Better communication between the two systems is the key to meeting the needs of both systems. As K-12 schools continue reforming, they must increase their efforts to explain the changes they are making to the higher education community. At the same time, the postsecondary system must do more to communicate to high schools their requirements for student preparation.

This section examines some of the ways in which state policy can help strengthen connections between the K-12 and postsecondary systems to improve student achievement, including:

- Raising postecondary admissions standards
- Promoting school-college partnerships
- Using postsecondary financial aid as an incentive for student achievement

Raising Postsecondary Admissions Standards

Clearly, there are important differences in the level and type of learning expected by different postsecondary institutions — community colleges, liberal arts colleges, regional state colleges and universities and research universities. While a differentiated postsecondary system serves a complex, technological, democratic society well, it also means there is no single standard of postsecondary achievement that can be readily communicated to middle school and high school students and teachers.

Research, however, shows that the differences in student learning expectations *between* colleges and universities are smaller than the differences in learning *within* them. While admissions and performance standards will continue to vary from college to college, there are a number of areas — for example, oral and written communication skills, and math and computational abilities — where secondary and postsecondary expectations can be easily aligned, allowing for greater comparability between high school graduation standards and college admissions standards.

Over the past several years, a number of states have sought to improve the efficiency and effectiveness of public colleges and universities by mandating higher admissions standards. For example, the **Georgia** Board of Regents has set strict limits on the number of students who can enroll in remedial courses at the state's college and universities. The board also mandated the review of all courses in the high school college-preparatory curriculum and has designed more rigorous entrance requirements that will take effect in fall 2001 at all 34 public colleges and universities in the state. Similar initiatives to raise admissions standards and/or limit enrollment in remedial courses are being implemented in **Alabama, California** and **Massachusetts**.

In several states, projects are under way at large university systems to design and test alternative admissions approaches, with an eye toward meshing postsecondary admissions practices and public school reforms. For example:

- The **Oregon** postsecondary system is developing a new admissions process that will evaluate applicants based on their proficiency in a number of content and process areas, rather than on the courses they have taken and their grade-point averages.
- In **California**, the University of California and California State University systems this year began allowing seniors from selected high schools to submit — along with traditional transcripts — alternative, school-designed transcripts that assess their knowledge and skills in several areas.
- In **Wisconsin**, the state university system is conducting a three-year project that gives students from selected high schools the option of applying under a competency-based admissions process that ignores course titles and grades and examines the students' achievement in meeting several knowledge and skill standards — termed "competencies" — set by the university. Similar approaches are under consideration in **Arizona, Maryland, Montana, New York** and **Washington**.

In addition, several states — notably **Georgia, Colorado** and **Maryland** — have created state-level coordinating councils and other mechanisms to promote closer alignment between the policies and practices of the K-12 and postsecondary systems. The goal is to improve efficiency, reduce redundancy and provide students with a performance-based education experience from start to finish, from preschool through the university level.

Promoting School-College Partnerships

School-college partnerships work to foster communication and shared expectations and standards across the K-12 and postsecondary systems. Such alliances — more than 3,000 of which have been established in the past several years — typically focus on improving student performance in specific disciplines, improving the performance of certain groups of students or strengthening connections between the two systems in specific areas, such as teacher education.

Many partnerships were begun through grant programs, such as those of the Fund for the Improvement of Postsecondary Education, the National Science Foundation and the Pew Charitable Trusts. Others have arisen through partnerships and initiatives established at the local level, typically involving one or more institutions of higher education working with a school district or groups of school districts. For example:

- One of the longest running and most emulated school-college partnerships is the Mathematics, Engineering, Science Achievement (MESA) project, which began in **California** in 1970 and has been replicated in **Arizona, Colorado, New Mexico, Oregon, Utah** and **Washington**.

  MESA is an "early outreach" program designed to increase the number of minority students who complete high school with the knowledge and skills needed to pursue a college degree in a math/science-based field. The program provides a variety of educational services and experiences for middle- and high-school students, including group study sessions, academic advising, tutoring, incentive awards, field trips, summer jobs and opportunities for parent participation.

  MESA programs serve an estimated 50,000 students in seven states. Combined state spending for the program in 1996-97 is $10 million.

- Also in **California**, the statewide Mathematics and Science Partnership Project brings together secondary school teachers and university faculty to improve the use of technology in high school science and mathematics instruction. After intensive university-based training in the use of computer hardware and software, the two groups of educators jointly design and develop lesson plans, curriculum units and assessments.

- In **Texas**, Trinity University in San Antonio established the Alliance for Better Schools, a partnership with four schools (two elementary, one middle and one high school) in one

Arizona's MESA Program

Arizona's Mathematics, Engineering, Science Achievement (MESA) program is the centerpiece of a statewide effort to increase the number of minority students who complete high school with a solid foundation in math, science and English so that they can enter and graduate from college in a math- or science-based field.

The MESA program, based on a model originated in California in the early 1970s, was launched by the University of Arizona in 1983. The program serves more than 2,500 Hispanic, black and Native American students in 26 middle and high schools across the state. Participating postsecondary institutions include the University of Arizona, Northern Arizona University and Arizona State University.

Research shows high levels of persistence in the program and high levels of college enrollment by students who have participated in MESA and/or APEX, another "early outreach" program aimed at minority students. For example:

- The number of high-school seniors who gain admission to colleges and universities increased from 70% in 1990 to 90% in 1995.

- The percentage of high school seniors who apply to the University of Arizona increased from 54% in 1990 to 70% in 1995.

- The percentage of high school seniors who gain unconditional admission to the University of Arizona increased from 42% in 1990 to 65% in 1995.

- The cumulative high school grade-point average of students who enroll at the University of Arizona increased from 2.830 in 1990 to 3.430 in 1994.

- High-school senior average SAT scores increased from 781 in 1990 to 914 in 1994.

Source: University of Arizona, 1996

University of Wisconsin's Competency-Based Admissions Pilot Project

Beginning in the 1995-96 academic year, the University of Wisconsin took part in a pilot project to allow high school students to apply under a competency-based admissions process. Participation in the project was limited to eight high schools where curriculum and assessment reforms were under way, and each student could decide whether he or she wanted to apply for admission under the competency-based process. In the case of students who wanted to take advantage of the alternative process, the high school was asked to evaluate their level of achievement — using a standardized reporting profile — in terms of university-defined competencies in five subject areas: English, mathematics, science, social studies and foreign languages.

The competencies, which were developed by University of Wisconsin faculty and staff in conjunction with K-12 schools and consultants, clearly outline what the university system thinks is important for a student to know and be able to do. Teachers who filled out the standardized reporting profile for students were asked to rate them on a scale of one to five for each competency.

To encourage participation in the project, the university required all students applying under the alternative system also to submit traditional applications, and promised that a student eligible under either the competency-based process or the traditional process would be admitted. At each of the university campuses, two admissions committees reviewed and decided on each applicant's admissibility, one on the basis of the competency-based standards and the other on the basis of traditional measures.

Comparing the outcomes of the two approaches, the university found that the competency-based admissions process did not prove more lenient than the traditional process. Data on the outcomes of the first year of the pilot indicate that the alternative process was more stringent, with fewer students admitted under the competency-based process alone than under the traditional process alone.

The Wisconsin competency-based admissions process provides a clear benefit to students who graduate from schools with a nontraditional curricular structure. Because it emphasizes mastery of specific knowledge and skills, it enables students to take a different configuration of courses from what is normally suggested for university admissions. University officials say that the competency-based admissions process will be used to supplement the traditional process, not to replace it.

Source: University of Wisconsin Office of Academic Affairs, 1997; National Governors' Association, 1997.

urban and one suburban district. The partnership was designed to create collaborative environments that would enhance reform efforts in both the K-12 schools and the Trinity teacher education program. Among the products of this 10-year-old partnership: development of a new, five-year Master of Arts in Teaching program, the establishment of internship and mentor-teacher programs and increases in graduate coursework among teachers at the participating high school.

In some cases, increased interaction between the K-12 and postsecondary systems has been spurred by state and/or federal policy initiatives. For example:

- In **Florida**, the state's Blueprint 2000 initiative requires extensive collaboration among the public schools, community colleges, state universities and the Florida Department of Education in several key areas, including course requirements, curriculum, assessment and grading practices.

- Thirty-five states have established tech-prep partnership programs that encourage collaboration between schools and colleges to better integrate academic and vocational-technical content. As an example, **Arkansas** has established state requirements for a tech-prep core curriculum aimed at improving the competency of both college-bound and noncollege-bound students in mathematics, science, communications, problem solving and work skills. School districts form partnerships with area community colleges to design and implement a continuum of technical training — available to all students — that includes computer technology, keyboarding, applied academics, workplace readiness and career orientation. Despite such noteworthy state-based and federal programs, most school-college partnerships are from local initiatives.

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They depend on soft money and on the vision and commitment of local leaders; often, they disappear as leaders move on or funding dries up. To foster school-college partnerships, state policymakers should regularly inventory and evaluate local initiatives, providing ongoing support to those with demonstrated success in improving student achievement.

Using Postsecondary Financial Aid as an Incentive for K-12 Student Achievement

Financial aid is a powerful policy lever historically directed at expanding access to postsecondary education. More recently, there has been increasing interest at both the state and federal levels in using financial aid as a direct incentive for K-12 student achievement.

Earlier this year, President Clinton proposed a postsecondary financial aid package that includes a $1,500-a-year refundable tax credit, limited to two years, for college students who maintain a B average.

This initiative is modeled in part on **Georgia's** lottery-funded HOPE scholarship program — Helping Outstanding Students Educationally — which has doled out more than $330 million to 239,000 students since its inception in 1993. HOPE offers high school students who graduate with a 3.0 grade-point average free tuition at any of the state's colleges and universities, provided they maintain a B average every year.

The percentage of Georgia high school students eligible for HOPE scholarships has risen from 47% to 62%, primarily because of the elimination in 1995 of the program's original cap on family income. In 1995-96, 98% of the in-state freshmen at Georgia Tech and 97% of the in-state freshmen at the University of Georgia were HOPE scholars.

According to a recent analysis of high school students' grade-point averages and SAT scores by Georgia State University's Applied Research Center, the increase in eligibility also reflects a slight upward trend in student performance. For example, the average SAT score among freshmen entering the University of Georgia, Georgia State and Georgia Tech in 1996 was 1073, compared with 1039 for freshmen entering those schools in 1991.

The HOPE scholarship program has inspired similar initiatives in several other states. In the 1997 legislative session, proposals for tax credits and/or scholarships linked to academic performance were introduced or under study in **Arizona, Connecticut, Florida, Maryland, Missouri** and **Virginia**.

The consequences of shifting postsecondary financial aid priorities from equity and access to merit are not yet known, so careful monitoring, research and evaluation are needed. For example, what effect will the B-average requirement have on grading policies and practices? What pressures are such a high-stakes system likely to exert on students and teachers? Could it exacerbate "grade inflation" — an increase in grades without a corresponding increase in knowledge and ability?

Another key issue is the extent to which such incentives for postsecondary enrollment need to be coupled with greater efforts to promote student retention and graduation. It is worth noting that in Georgia, the percentage of students who fail to maintain a B average in their freshman year — roughly 50% — remains as high today as it was before the HOPE program began. This suggests the need for a dual focus — not only motivating students to achieve and providing them with the ability to enter college, but also strengthening efforts to ensure student success.

Conclusion

Creating mechanisms for communicating postsecondary expectations for high K-12 student achievement through enhanced admissions practices and clarified criteria, through sustained school-college cooperation and through direct incentives to strive for postsecondary education hold great promise.

Programs and policies aimed at creating stronger links between the postsecondary and K-12 education systems, however, have undergone little or no systematic evaluation, particularly in terms of their impact on K-12 student achievement. In all three areas — enhanced admissions standards, school-college collaboration and merit-based financial aid programs — there is a dearth of useful, reliable information.

Greater research into the effects of these policy alternatives on student learning productivity can be used to guide policy and practice and help harness the full power of postsecondary education to contribute to high K-12 student achievement.

Reallocating Resources:

Investing in Student Achievement

If there are to be fundamental and lasting improvements in public education, the processes of policymaking, policy evaluation and resource allocation must support what works. Policymakers must shift from a view of education spending as simply *budgeting* an ongoing stream of revenues to one that is based on *investing* in programs that provide the greatest return for the dollar.

This section examines some of the methods policymakers can use to move to a more investment-oriented approach to education policymaking. These methods are grounded in the notion that a more rational budget process, focused squarely on results — coupled with a greater emphasis on program evaluation and legislative follow-through — can lead to significantly better use of existing resources.

Results-Based Budgeting: Lessons from the Past, Prospects for the Future

Policymakers for the most part have little experience in reallocating resources from unproductive policies and programs to ones that produce results. Public sector budgeting is typically incremental by design and based on the expectation of ever-increasing revenues. There is no tradition of basing budget decisions on the proven effectiveness of programs.

As an inherently political process conducted by political actors, the budget process places a high priority on conflict avoidance. It is much less difficult or controversial to change a program's budget at the margin than to reform it radically or eliminate it entirely — even if the program is not achieving its intended results. That is why government budgets tend to look like "more of the same" from year to year.

Since the mid-1970s, there have been a number of attempts at the state and federal levels to introduce greater rationality into the budget process, such as zero-based budgeting and management by objectives.

Recent efforts to introduce greater rationality into the budget process have focused on tying appropriations to program outcomes. The idea is that instead of focusing on *inputs*, such as the number of dollars appropriated to new highways, or *outputs*, such as the number of miles of new highways, policymakers should focus on *outcomes* that really matter to citizens. In the case of transportation, this might mean satisfaction with the road system, the number of person-hours spent in traffic, the life span of roads, the accident rate on the state's highways and so on.

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Funding is supposed to follow performance: programs that effectively deliver on their goals are to be rewarded, while ineffective programs are to be cut or eliminated.

Typically, such approaches call for comprehensively defining the state's programs and program goals; developing performance indicators or benchmarks to measure attainment of outcomes related to the goals; and reporting budget requests and appropriations by program, in place of or in addition to the traditional line-item format. States also can tie strategic planning, performance audits and/or sunset provisions to their budget process.

Among the states that are either using or developing a budget process that includes performance-based approaches are **Arizona, Florida, Georgia, Iowa, Louisiana, Michigan, Minnesota, Mississippi, North Carolina, Utah, Vermont** and **Wyoming**.

Higher education appears to be a particularly fertile field for performance-based strategies. Ten states already have implemented such an approach, and another 10-15 states are moving in that direction. In most cases, however, performance-based funding serves only to provide "incentive funding" over and above an institution's basic formula allocation. Thus, performance-based measures end up affecting only a small fraction — 5% or less, in most states — of total higher education spending.

Current approaches to results-based budgeting face many of the same obstacles encountered by other such approaches in the past. These include:

- Rational budgeting is difficult. In the past, the requirements of good data and good analysis often exceeded the capabilities of most state legislatures and state information systems.
- Previous results-based approaches did not offer policymakers, particularly elected officials, a positive pay-off for axing ineffective programs supported by all or part of their constituencies.
- Previous approaches did not give elected policymakers adequate incentives to attend to the relatively unglamorous tasks of overseeing implementation and evaluation once the program was in place.

The remainder of this section offers an approach to addressing these problems in the hope that greater rationality can in fact be injected into the budgeting process.

Asking the Right Questions: The Role of Research and Data

Results-based decisionmaking requires that new initiatives be closely scrutinized to ensure that they they have a clear and measurable goal, fit with existing efforts and are manageable in terms of resources and implementation.

A similar analysis must be performed on all existing programs and policies. The budgeting process itself must not be automatic, but rather must blur the lines between established programs and new initiatives; each must be seen as competing and alternative means to the preferred policy ends.

In theory, the rational decisionmaker will identify and analyze all possible policy alternatives in order to isolate the one that best meets his or her goals. In practice, simply identifying the universe of policy alternatives can be a daunting task; an even greater challenge is attempting to analyze the relative effectiveness of alternatives when typically we do not have good performance data on existing programs, let alone on proposed initiatives that have never been tried.

Earlier this year, the respected national journal *Education Week*, in conjunction with the Pew Charitable Trusts, published *Quality Counts*, a comprehensive report card on the condition of public education in the 50 states. In a section entitled "What We Don't Know," the editors noted a troubling lack of data across a wide range of issues and activities.

"If the data we depend on to monitor the economy were as incomplete, as unreliable and as out of date as the data we depend on to monitor education in the United States, we might well have the economy of a Third World country," the report stated. "Public education is a vast enterprise that directly touches the lives of most Americans. Its success is clearly linked to the welfare of the nation and the future of our children. Yet we do not know in any but the crudest way how well our education system is performing."

Clearly, for education policy to have a greater impact on student achievement, policymakers need a more rigorous, thoughtful process for making decisions. Among other things, state leaders need to do the following:

- Insist on well-documented evidence, where available, of impact on student achievement before investing in or expanding education initiatives.

- Ask tough questions about suggested reforms and those already in place.
- Require evaluation plans as an integral part of program proposals — and allocate money to fund the evaluations.
- Support the development of information systems that provide the means to more reliably evaluate the impact of programs and policies on student learning.
- Put together a diverse package of education policy initiatives, judiciously mixing the better-researched approaches with cutting-edge initiatives that offer higher risk but potentially higher gains.

In considering various policy alternatives, it is useful to keep in mind these two questions:

- Are there any good evaluations of the effectiveness of these alternative approaches, either in one's own state or in other states? A good evaluation typically compares the outcomes for students who participated in a program with those of a similar group of students who did not. The best evaluations indicate the effectiveness of the program per dollar spent.
- Which of the alternatives under consideration is most likely to be effectively implemented, given the financial, human and organizational resources available in one's state? Can the state, for example, afford to implement intensive dropout prevention programs among middle school students to the extent that they would have a significant impact on dropout rates? Do local school districts have the expertise and willingness to implement such programs? If they do not, who will operate them?

Sometimes a shortage of resources means just making do — going with the Chevrolet rather than the Cadillac version of a given program. It is important to assess, however, whether potential funding problems threaten the essence of one's effort. Going without power windows is one thing; going without an engine is another. If funding is that short, it is probably better to do without the program entirely.

What Doesn't Get Watched Doesn't Get Done: The Importance of Legislative Follow-Through

Why does there so often appear to be a gap between what policymakers think they are doing when they institute a policy and what actually is implemented? What are the preconditions for effective translation of policy goals into programs and practices?

A major factor is the extent to which there is clear communication about what the proposed policy is designed to accomplish, why it intends to accomplish that end and what the link is between the policy and the problem it is designed to solve. The causal relationship that underlies a proposed policy must be clear and must make sense to those who are charged with carrying it out.

Choosing a Policy To Achieve a Goal

Even if a policymaker already has a preferred policy in mind, it is useful to survey the range of alternatives that are available. There are a number of sources that can help a policymaker quickly learn what has been done in his or her own state and in other states. For example:

- National organizations representing different levels of state government, such as the National Council of State Legislatures, the National Governors' Association, State Higher Education Executive Officers and the National Council of Chief State School Officers
- National groups devoted to education research and information dissemination, such as the Consortium for Policy Research in Education and the Education Commission of the States
- Federal reports from agencies such as the U.S. Department of Education's Office of Educational Research and Improvement and the General Accounting Office
- Regional education organizations or laboratories, such as the Southern Regional Education Board, the Mid-Continent Regional Education Laboratory or the SouthEastern Regional Vision for Education
- State departments of education and education associations, which can furnish information about local initiatives
- The Internet, which is sometimes a good source for information on a specific issue.

Using Research To Inform Policymaking

To what extent can, or should, policymakers rely on research findings, particularly when the "experts" disagree?

In the case of reduced class size, for example, some research in the late 1980s concluded that smaller classes did not improve student achievement enough to justify the expenditures needed to achieve them. On the other hand, research findings from Tennessee's STAR (Student Teacher Achievement Ratio) program, a pilot project to reduce class size, pointed to improved achievement among students in smaller classes — and suggested that these positive effects remained at least until the 9th grade. Why were there opposite conclusions from two studies addressing the same issue?

Part of the answer had to do with methodology. The earlier research drew its conclusions based on differences in average class size and test scores over time and across countries. The STAR results came from an actual experiment, with students randomly assigned to either a small class (fewer than 15 students), a regular class (approximately 25 students) or a regular class staffed with a teacher and a teacher's aide from kindergarten through 3rd grade. Also, the Tennessee program focused on students in the primary grades (on the assumption that this is when smaller classes really make a difference), and reduced class size to the "magic" number of 15; the earlier study aggregated data for all grade levels and did not distinguish between classes of more or less than 15 students.

Clearly, well-intentioned researchers in any field may reach conflicting conclusions based on differences in research methods or based on interpretive differences. That does not mean statistical methods are unreliable or should be ignored. Rather, the message is that it is risky to base an entire policy or program on just one study.

If multiple studies agree in their conclusions, policymakers can have confidence that they are getting at something "real." If the research conflicts, policymakers should assess which studies are better, or ask a staff person with the requisite expertise to do so. Policymakers should keep their eyes open for studies that contradict widely accepted, but previously untested, ideas about what does (or does not) work in terms of improving student achievement.

Sources: Office of Educational Research and Improvement, U.S. Department of Education, 1988; SouthEastern Regional Vision for Education, 1996

In addition, proposed policies may not be implemented well if the resources allocated to them are inappropriate or are used inappropriately. A lack of resources may signal that policymakers' commitment is weak, and that failure to act promptly on the policy as delineated may be tolerated.

Because implementation is so important to the fate of any policy, legislative monitoring and follow-through is a vital method of making sure programs operate as effectively as possible, and as intended by the legislature when it conceived and funded them.

These monitoring and follow-through functions can take a variety of forms: study committees, formal audits, program evaluations by staff or independent, third-party evaluations. Fortunately, expanded effort in this area is within the capabilities of most legislatures. The combination of more professional legislative staff and improved access to information about the relative success of programs and policies in other states gives legislators the tools they need to perform solid analysis.

The key to translating policy goals into programs is consistent support by legislators and others for the implementation process: regular and ongoing feedback, adjustments to cope with unforeseen issues and sustained support from legislative leaders for committee chairmen's efforts to keep oversight issues on the front burner.

Equally important, policymakers must provide a consistent message over time that reinforces the initial policy. Competing and conflicting initiatives undertaken during the implementation stage of a given policy can have a chilling effect. They create the impression that legislators and governors are in it for the short haul, rather than being committed to an organized and sustained improvement effort.

Expanded evaluation and monitoring efforts require much of individual legislators. They must become knowledgeable about a broad range of education issues, not just their pet projects, and they must use this knowledge to publicize successes and failures of programs and policies. They must attempt to take more of a

long-term view, to understand the time lag between policy and practice and to show restraint and courage by maintaining this perspective even in the face of imminent re-election campaigns.

Conclusion

We are now well into the second decade of the education reform movement that was spawned in large part by the publication of *A Nation at Risk* in 1983. Despite increased spending, improved staffing in schools, new technology and the establishment of standards, progress toward higher levels of student achievement has been slow. Further progress will depend on institutionalizing processes that weed out unproductive state-level policies and programs while providing incentives to local schools for increased student achievement through smarter, more efficient, more effective state programs.

With the strengthening momentum toward a more performance-based education system, policymakers and education leaders alike are faced with two serious challenges.

First, there is a continuing need for solid evidence about *what works* and what does not work in improving student achievement. With billions of public dollars at stake (not to mention the future of American young people and the competitiveness of the nation's workforce), there are mounting calls for rigorous efforts to identify best practices in education, bringing better data to bear on decisions about where to invest resources for best effects on student learning. Beyond the benchmarking of best practices, there remains an urgent need for other varieties of research that will support intelligent policymaking and resource allocation.

The second challenge involves application of political will to the task of changing the incentive structures presently operating in the education system at both the K-12 and postsecondary levels. If the public objective is for all elementary schools to ensure that 4th graders read at grade level, then it has to *matter* that such performance is achieved. If the public wants to see greater attention paid to quality in undergraduate education, then there should be incentives for that work and rewards for institutions that do it well. Should the system's incentives ever be brought consistently into alignment with the rhetoric of value placed on learning, the effect on the performance of schools, colleges and universities may be very powerful indeed.

Legislators, governors and other policymakers must recognize their common interest in working together for long-term success. They must commit themselves to a more rational state budget process, focused squarely on the results of education policies and programs. They must devise more useful, reliable methods of gathering information about and evaluating both existing and proposed policy initiatives. They must be willing to do the hard work needed to understand the issues and craft workable solutions, and to make the unpopular decisions and expensive investments today that will bear fruit well after they have left office.

Questions a Policymaker Should Ask

During the Policy Formulation Phase:

- What is the intent of the proposed policy? Who will be affected?
- What is the research evidence that the proposed policy will improve student achievement?
- How does the proposed policy build on — or complement — existing policies or the work of existing agencies?
- What other policies need to be in place — or eliminated — to support the proposed policy, and in what sequence?
- Are there any potential legal pitfalls for the state or local districts if the proposed policy is implemented?
- Does the estimated cost of implementing the proposed policy match the intended benefits?
- What are possible unintended consequences? Do these outweigh the benefits?
- What evaluation will be built into the legislation to assess the effectiveness and impact of the proposed policy?

During the Policy Implementation Phase:

- What "benchmarks of progress" will be used to guide the implementation of the policy over a two- to five-year period?
- What agency or group will collect benchmark data and review it? On what timeline? At whose expense? Can this be done by an existing agency?
- What is the current capacity of the system to implement the proposed policy?
- What is the state's role in providing assistance for implementing the policy?
- What will happen to schools, districts or higher education institutions that fail to comply or show progress? Will there be sanctions, incentives or rewards?

During the Policy Evaluation Phase:

- What is the evidence that the policy is contributing to higher student achievement?
- What factors are contributing to success? How can these be replicated or spread?
- What level of funding is appropriate based on the student achievement results? Are other programs more effective?
- How long should a program or policy be in place before a decision is made to continue, expand or abandon it?

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